



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

169

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/933,334	08/20/2001	Motomichi Mishima	MAT-8180US	5968

7590 03/23/2005

RATNER AND PRESTIA

Suite 301

One Westlakes, Berwyn

P.O. Box 980

Valley Forge, PA 19482-0980

EXAMINER

DUONG, THANH P

ART UNIT

PAPER NUMBER

1764

DATE MAILED: 03/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/933,334

Applicant(s)

MISHIMA ET AL.

Examiner

Tom P Duong

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3 and 20-22 is/are pending in the application.
- 4a) Of the above claim(s) 27-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3 and 22 is/are rejected.
- 7) ☒ Claim(s) 20 and 21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

Applicants' remarks and amendments filed on December 27, 2004 have been carefully considered. Claims 1, 3 and 20-22 have been amended. Claims 2, 4-19, and 23-26 have been canceled. Claims 27-34 have been withdrawn. Claims 1, 3 and 20-22 are pending in this application.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Publication Number 2000-218130 (JP '130). JP '130 discloses a purifier (Fig. 1) to purify exhaust gas, comprising: (a) a cylindrical case (3) having an inlet (1) and an outlet (2); (b) a plurality of circular, metallic thin plates (fin 7) disposed in said case, said thin plates being arranged at predetermined intervals, and each of said thin plates having at least one through-hole (gap of between blades 7a and 7c); (c) a catalyst held to each of said thin plates (Abstract); said catalyst having a function of purifying the exhaust gas; (d) partition plates (twisted blades 7a and 7c, formed communication part) disposed between the respective thin plates, said partition plates partitioning the spaces between the respective thin plates; and (e) a catalyst heater (8) to heat each of said thin

plates, wherein the exhaust gas enters into said case from said inlet, and passes through the spaces formed between the respective thin plates, and each of said through-holes (space between the blades), and is exhausted from said outlet; catalytic heater installed in metallic pipe 6; raised partition plate (15); catalyst wire netting (10); a heat insulation material (9); radiation fin (7); and a suction fan (20). JP' 130 discloses a tubular heater 8 but fails to disclose a plurality of U-shaped catalyst heaters are disposed thru the thin plates. However, it would have been *prima facie* obviousness to duplicate additional heaters to further facilitating the decomposing the exhaust gas since the court held that mere duplication of parts has no patentable significance unless a new and unexpected result is produced. See *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960). With respect to the "U-shaped", it would have been *prima facie* obviousness to change the configuration of the heater since the court held that a change in the configuration or shape is a matter of design choice. See *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

2. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Say et al. (5,790,934). Say '934 discloses a purifier (Fig. 6) to purify exhaust gas, comprising: (a) a cylindrical case (306) having an inlet (108) and an outlet (110); (b) a plurality of circular, metallic thin plates (fin 302) disposed in said case, said thin plates being arranged at predetermined intervals, and each of said thin plates having at least one through-hole (314); (c) a catalyst held to each of said thin plates (Col. 5, lines 52-57); said catalyst having a function of purifying the exhaust gas; (d) partition plates

(316) disposed between the respective thin plates, said partition plates partitioning the spaces between the respective thin plates; and (e) a catalyst heater (104, 304) to heat each of said thin plates, wherein the exhaust gas enters into said case from said inlet, and passes through the spaces formed between the respective thin plates, and each of said through-holes, and catalytic heater installed pipe (104, 304). Say '934 discloses a spiral tubular heater (104) and the heater 304 formed of a plurality of annular heaters which formed a U-shaped configuration in a cross-section view as shown in Fig. 6.

Alternatively, it would have been *prima facie* obviousness to duplicate additional heaters to further facilitating the decomposing the exhaust gas since the court held that mere duplication of parts has no patentable significance unless a new and unexpected result is produced. See *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960), and it would have been *prima facie* obviousness to change the configuration of the heater since the court held that a change in the configuration or shape is a matter of design choice. See *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

3. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP-05154348 (JP '348) in view of Say et al. (5,790,934) and Gutkowski et al. (3,152,988). Regarding claim 1, JP '348 discloses a purifier (1) to purify exhaust gas, comprising: (a) a case (2) having an inlet (21) and an outlet (22); (b) a plurality of thin plates (3) disposed in said case, said thin plates being arranged at predetermined intervals (as shown in Figure 1), and each of said thin plates having at least one through-hole (30); (c) a catalyst (32) held to each of said thin plates (3); said catalyst

Art Unit: 1764

having a function of purifying the exhaust gas; (e) a catalyst heater (power source 9) to heat each of said thin plates, wherein the exhaust gas enters into said case from said inlet (21), and passes through the spaces (30) formed between the respective thin plates, and each of said through-holes, and is exhausted from said outlet. JP '348 fails to disclose the (d) partition plates disposed between the respective thin plates, said partition plates partitioning the spaces between the respective thin plates. Say teaches the fins 302 (plates) can be fabricated with the fins 302 (partition plates) to promote turbulent flow, direct fluid flow, and create cross-stream vortices. Likewise, Gutkowski teaches the stud-like members 17 are adapted to form the spacing between the disc members 11 and 12 to define a fluid communication passage 20 (Col. 2, lines 8-17). Thus, it would have been obvious in view of Say and/or Gutkowski to modify the purifier of JP '348 to include the partition plates of Say and/or Gutkowski in order to gain the above benefits. Say '934 shows light source 304 consisting of annular heaters but fails to show a U-shaped catalyst heaters. However, it would have been *prima facie* obviousness to change the configuration of the heaters since the court held that a change in the configuration or shape is a matter of design choice. See *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

4. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP '130 in view of Tomizawa et al (5,740,725). JP '130 fails to disclose a temperature detector disposed near said inlet, wherein said temperature detector has a function of detecting the temperature of said catalyst heater and stopping the power supply to said catalyst

heater. Tomizawa teaches the catalyst temperature detector 326 (Col. 15, lines 1-6) can be mounted upstream or downstream side of the catalyst (Col. 14, lines 55-62) in order to monitor the concentration of the gas stream (Col. 15, lines 1-3). Thus, it would have been obvious in view of Tomizawa to one having ordinary skill in the art to modify the purifier of JP '130 with a temperature detector as taught by Tomizawa in order to monitor the concentration of the gas stream.

5. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over the applied references (JP '348 in view of Say '934 and Gutkowski et al. '988) as applied to claim 1 above, and further in view of Tomizawa et al (5,740,725). The applied references fail to disclose a temperature detector disposed near said inlet, wherein said temperature detector has a function of detecting the temperature of said catalyst heater and stopping the power supply to said catalyst heater. Tomizawa teaches the catalyst temperature detector 326 (Col. 15, lines 1-6) can be mounted upstream or downstream side of the catalyst (Col. 14, lines 55-62) in order to monitor the concentration of the gas stream (Col. 15, lines 1-3). Thus, it would have been obvious in view of Tomizawa to one having ordinary skill in the art to modify the purifier of the applied references with a temperature detector as taught by Tomizawa in order to monitor the concentration of the gas stream.

6. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Say '934 in view of Tomizawa et al (5,740,725). JP '934 fails to disclose a temperature detector

Art Unit: 1764

disposed near said inlet, wherein said temperature detector has a function of detecting the temperature of said catalyst heater and stopping the power supply to said catalyst heater. Tomizawa teaches the catalyst temperature detector 326 (Col. 15, lines 1-6) can be mounted upstream or downstream side of the catalyst (Col. 14, lines 55-62) in order to monitor the concentration of the gas stream (Col. 15, lines 1-3). Thus, it would have been obvious in view of Tomizawa to one having ordinary skill in the art to modify the purifier of Say '934 with a temperature detector as taught by Tomizawa in order to monitor the concentration of the gas stream.

#### ***Allowable Subject Matter***

Claims 20 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

Applicant's arguments with respect to claims 1-34 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP



§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom P Duong whose telephone number is (571) 272-2794. The examiner can normally be reached on 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tom Duong  
March 21, 2005

TD



Michael Caldarella  
Supervisory Patent Examiner  
Technology Center 1700